

defined between data fields in the diverse sources and markup tags listed by the selected schema, and the source data are mapped in accordance with the correspondences to generate unified data in a markup language.

Srivastava describes an extensible framework for the automatic extraction and transformation of metadata from media files into logical annotations. A type-specific parsing module, based on the mimetype of the media file in question, extracts the metadata from each file. The annotations from the media files are formatted into a standardized form, which is then mapped into a database schema (abstract).

Odom describes a method for modeling, storing and transferring data in a non-hierarchical, non-integrated neutral form. This method is said to enable the direct integration of separate data models and their data (abstract). The method defines independent scope segment models and corresponding sets of information, which are automatically linked so as to function as the equivalent of a single model and set of information (col. 5, line 66 - col. 6, line 7).

Kwang describes an activity-based system for long-lived transactions between disconnected servers and clients (abstract). Users of the system can connect to a server, download their available activities, disconnect from the server and work on the activities by processing the information (col. 2, lines 41-43). Each activity uses only a small part of an enterprise database. Data subsetting is therefore used to define an activity-specific domain and schema for data manipulation (col. 9, lines 37-46). Thus, the term "domain," as used by Kwang, refers to a certain subset of an enterprise database that is used by a particular user in a particular activity. Kwang's "domains" are all parts of the same database and thus all belong to the same domain in the sense in which the term "domain" is used in the present patent application.

Prezioso describes a fuzzy logic entity behavior profiler, which profiles the behavior of entities with common characteristics. A behavior profile is developed, and can be used to compare the degree to which an entity within a peer group is or is not associated with a set of behavior characteristics relative to others in the same peer group (abstract). In a passage cited by the Examiner (col. 6, lines 22-32), Prezioso lists a number of exemplary peer groups that can be profiled in the healthcare domain.

Prezioso, in other words, uses the word "domain" in the sense of a broad application field, i.e., in a sense completely different from that used by Kwang. Another example of a domain cited by Prezioso is the retail industry (col. 6, lines 33-37). Prezioso, however, does not teach or suggest applying his profiling technique – or

any other sort of computational technique – to the domain as a whole. Rather, he profiles specific peer groups within the domain (physicians, professional clinics, hospitals, medical supply companies, etc. – see col. 6, lines 22-27).

In view of the above analysis, Applicant respectfully submits that the addition of Prezioso to the previously-cited references (Srivastava, Odom and Kwang) would not have led a person of ordinary skill in the art to the invention recited in claim 1. The Examiner stated the following motivation for combining Prezioso with the other references (page 4 in the present Official Action):

“...Prezioso discloses in col. 6, lines 20-35 that using healthcare as a domain can facilitate data analysis, such as behavior profiling. It would have been obvious to one of ordinary skill in the art at the time of the invention to use a healthcare domain to facilitate data analysis as disclosed in Prezioso.”

This statement does not support a *prima facie* case of obviousness against claim 1 for a number of reasons:

1) As noted above, Prezioso performs data analysis not on the healthcare domain, but rather on limited peer groups within the domain. Therefore, the statement that Prezioso uses healthcare as a domain for data analysis is incorrect.

2) Prezioso, when considered as a whole, does not constitute analogous art to the claimed invention. “In order to rely on a reference as a basis for rejection of an applicant’s invention, the reference must either be in the field of the applicant’s endeavor or, if not, then be reasonably pertinent to the particular problem with which the invention was concerned” (MPEP 2141.01(a)). Claim 1 is directed to a method that maps source data from diverse sources using a schema to generate unified data in a markup language. Prezioso relates to fuzzy analysis of behavior characteristics. He has nothing to do with data mapping, schemata, or markup languages. Prezioso provides no more than a working definition of the term “domain.”

3) Prezioso’s definition of “domain,” however, is incompatible with Kwang’s definition. As noted above, Kwang’s system uses “domains” that are activity-specific subsets of an enterprise database that are each accessed by a particular user. The Examiner cites Kwang as an example of “the use of multiple schema that are specific to different data domains” (page 3 in the Official Action), meaning a different schema is used for each user and activity. Interpolating Prezioso’s definition of “domain,” meaning a broad application field, into Kwang would render Kwang’s system

inoperative, since all users would then be in the same domain and would have to use the same schema.

Therefore, claim 1 is believed to be patentable over the cited art. In view of the patentability of claim 1, claim 2, which depends from claim 1, is believed to be patentable, as well.

Independent claims 12 and 22 recite apparatus and a computer software product, respectively, which operate on principles similar to the method of claim 1. These claims are therefore believed to be patentable for the reasons stated above. In view of the patentability of claims 12 and 22, claims 13, 21 and 23, which depend from these independent claims, are also believed to be patentable.

Claims 3-11, 14-20 and 24-29 were rejected under 35 U.S.C. 103(a) over Srivastava in view of Odom, Kwang and Prezioso, and further in view of one or more of Call (U.S. Patent 6,154,738), Draper (U.S. Patent 6,449,620), Kuwahara (U.S. Patent 6,202,072), Motoyama (U.S. Patent 5,504,891), Cianfrocca (U.S. Patent 6,088,796) and Kleinerman (U.S. Patent 6,041,365). Each of these claims depends from one of independent claims 1, 12 and 22. In view of the patentability of the amended independent claims, as explained above, claims 3-11, 14-20 and 24-29 are also believed to be patentable.

Claims 30-34 were rejected under 35 U.S.C. 103(a) over Srivastava in view of Odom and Kwang and further in view of Sarkar. Applicant respectfully traverses this rejection.

Claim 30 recites a method for processing source data from diverse sources, in which source data are mapped to a markup language, based on a unified schema, responsively to a query in the markup language. In response to the previous Official Action in this case, the claim was amended to clarify that the source data exist in diverse formats, and that the mapping from the diverse formats to the unified schema is carried out when the query is received. In other words, the unified data created by the method of claim 30 are not held as a static database, but are rather created dynamically when required by a particular query. As a result, although the data are held in diverse formats, the query reply comprises unified data in the markup language.

Sarkar describes a system for navigation through multiple XML/RDF documents using implicitly-generated queries (abstract). The documents may be addressed using SQL queries (col. 5, lines 59-67). Sarkar's claim 13 (col. 26, lines 1-42) includes steps of preparing and executing SQL queries, while claim 14 (col. 26,

lines 43-50, cited by the Examiner) states that such queries may be addressed to various types of databases, data stores and XML/RDF documents.

In support of the amended claim, Applicant explained, in remarks accompanying the amendment, that Sarkar neither teaches nor suggests that documents be mapped dynamically from diverse formats to a markup language in response to queries when the queries are received, as required by claim 30. Rather, as stated clearly in the abstract, Sarkar is concerned with assisting users in “navigation through multiple documents in Extensible Markup Language [XML] and Resource Description Framework [RDF] to inspect data/metadata...,” i.e., Sarkar assumes that the documents already exist in XML/RDF before the user submits a query. (See, for example, Sarkar’s Fig. 1.)

In rejecting claim 30, the Examiner evidently ignored this point, reiterating the incorrect statement made in the previous Official Action that “Sarkar may be considered to map the source data to the query upon receiving the query... in that the mapping is not completed until the query is [received]...” (page 11 of the present Official Action). This reading contradicts the sense of Sarkar’s abstract and other portions of Sarkar that deal with query handling. The Examiner likewise ignored Applicant’s request, in the remarks to the preceding amendment, that the Examiner point out the specific passages in Sarkar that support the Examiner’s position that Sarkar’s mapping is not completed until the query is received.

Instead, the Examiner wrote that:

“The new limitation that the sources must be in diverse formats may be rejected on the basis that it was notoriously well known in the art at the time of the invention that even those XML is a unified format, XML content may comprise a diverse set of formats such as XHTML and XSL. It would have been obvious to one of ordinary skill in the art at the time of the invention to have the content comprise a variety of XML sub-formats because this would increase the versatility of the source data processing.”

But the fact that data sources may have different formats is not the point of novelty of this claim. Rather, claim 30 recites the step of “upon receiving the query, mapping the source data from at least one of the diverse formats to the unified schema responsively to the query...” (emphasis added). As explained above, the data are mapped from the diverse formats to the unified schema dynamically, when required by a particular query,

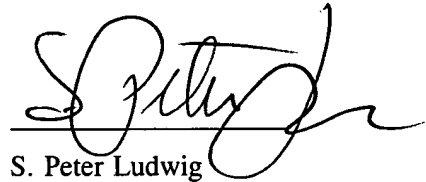
at the time the query is received. This feature of the invention is neither taught nor suggested by the cited art. The Examiner has not related to this point at all.

Thus, Applicant respectfully reiterates that claim 30 is patentable over the cited art. Independent claims 31 and 32, which recite apparatus and a computer software product that operate on principles similar to the method of claim 30, are believed to be patentable for the same reasons. In view of the patentability of claim 32, claims 33 and 34, which depend from claim 32, are believed to be patentable, as well.

Applicant believes the remarks presented hereinabove to be fully responsive to all of the grounds of rejection raised by the Examiner. In view of these remarks, Applicant respectfully submits that all of the claims in the present application are in order for allowance. Notice to this effect is hereby requested.

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Respectfully submitted

A handwritten signature in black ink, appearing to read 'S. Peter Ludwig', written over a horizontal line.

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